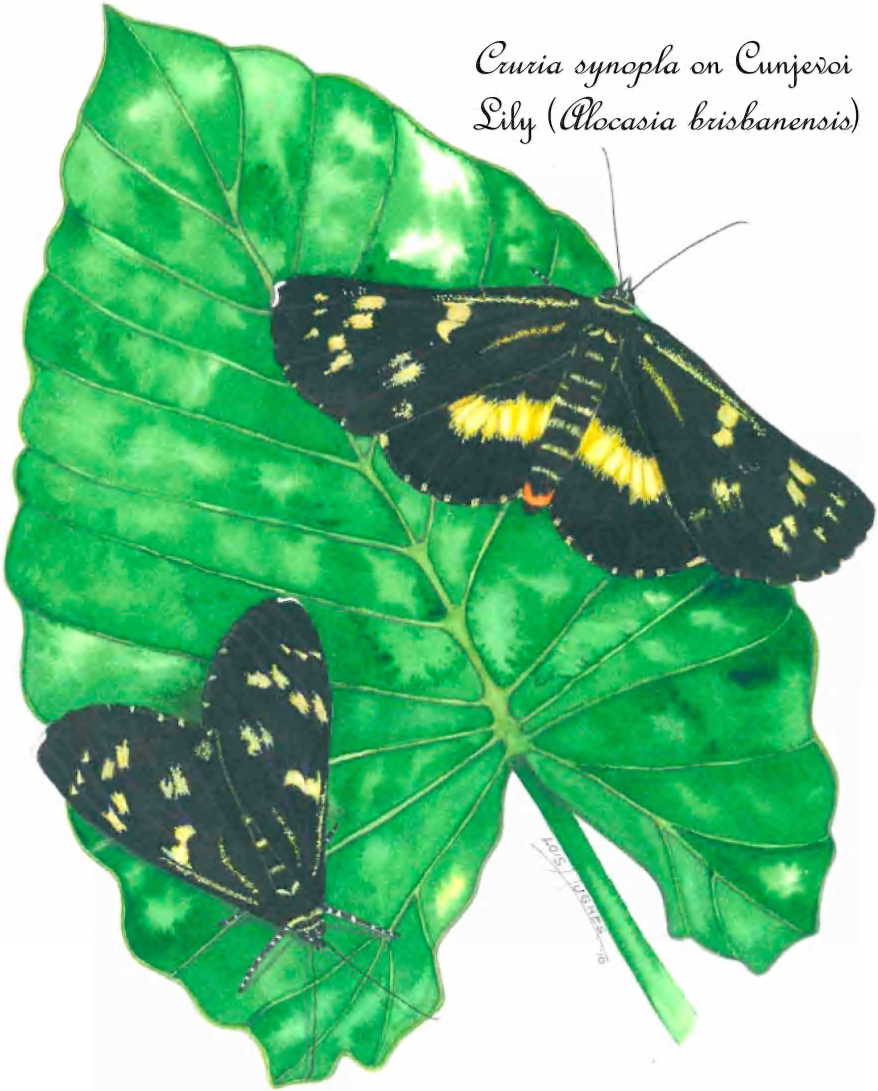

Curia synopla on Cunjevoi Lily (*Alocasia brisbanensis*)

METAMORPHOSIS

AUSTRALIA

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PLANNING AND ORGANIZING COMMITTEE 2010

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PLANNING AND ORGANIZATION MEETINGS

A quarterly meeting is scheduled in order to plan club activities and the magazine. See BOIC Programme.

CONTACT ADDRESS AND MEMBERSHIP DETAILS

PO Box 2113, Runcorn, Queensland 4113
Membership fees are $25 for individuals, schools and organizations.

AIMS OF ORGANIZATION

- To establish a network of people growing butterfly host plants;
- To hold information meetings about invertebrates;
- To organize excursions around the theme of invertebrates e.g. butterflies, native bees, ants, dragonflies, beetles, freshwater habitats, and others;
- To promote the conservation of the invertebrate habitat;
- To promote the keeping of invertebrates as alternative pets;
- To promote research into invertebrates;
- To encourage the construction of invertebrate friendly habitats in urban areas.

MAGAZINE DEADLINES

If you want to submit an item for publication the following deadlines apply:
March issue – February 14th June issue – May 14th
September issue – August 14th December issue – November 14th

MATERIAL IN THIS MAGAZINE IS COPYRIGHT

COVER

Cruria synopla - Painting by Lois Hughes. Prints of this painting may be available from the artist. Ph. 07 3206 6229.

FROM THE PRESIDENT

The return of good rainfall has brought wonderful new growth to our vegetation and has undoubtedly proven beneficial to our invertebrate populations. It may be co-incidental but this issue seems to be dominated by moth stories! Of course, there are other articles of interest and I thank the various authors for their contributions.

I am sure you will find the reports by Dave St Henry and Col Bowman on their activities with school children and school communities to be very encouraging as their work is at the practical end of some of the major goals of this Club. Dave has produced a colour booklet on the practical steps needed to establish butterfly gardens at schools (and elsewhere). This has been published by the Club and is available at a cost of $2.50.

Sunday 21st November saw the launch of Butterfly Plants for Poverty. This wonderful project conceived by Ray Archer and brought to fruition with the help of Delphine and a legion of volunteers, is a significant milestone in achieving major goals of the Club. While helping to restore our biodiversity by planting plants we will also be helping some of the poorest people on our planet.

On Sunday we also took the opportunity to launch the third edition of the Club's popular butterfly host plant book. I commend it to you.

Best wishes ***Ross***

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Life history notes on the day-flying moth *Cruria synopla* Turner, 1903 and its distinction from *C. donowani* (Boisduval, 1832) (Lepidoptera: Noctuidae) - *John T Moss*

Background

According to the 1996 Checklist of the Lepidoptera of Australia, there are six species of *Cruria* in Australia. Two of these, *C. synopla* and *C. donowani*, are widespread in eastern Australia. Adult moths of both species are similar in appearance (see images 1 and 2). The main diagnostic feature is the transverse median band of the hindwing, which is: creamy-white to pale yellow and irregular in *C. donowani*, but buttercup yellow and uniform in *C. synopla*. Also, the forewing spots are distinct in *C. donowani* but are less defined in *C. synopla*. Until 1896 when Jordan erected the genus, all *Cruria* were in genus *Agarista.*

1. Adult *Cruria donowani*

2. *Cruria synopla*

Species distribution and new host plants

Ian Common in his classic 1990 "Moths of Australia" refers to *C. synopla* as occurring "on the Atherton Tableland and from southern Queensland to central New South Wales". He illustrated the adult moth. He stated that the host plant had not been recorded but went on to list the known host plants of the related *C. donowani* and illustrated what he considered was its (prepupal) larva.

Kendall (2009), in his article on *C. donowani*, relisted those host plants and added a further species of Tarvine, *Boerhavia* sp. St. George (Nyctaginaceae), found in dry woodland west of Warwick, Qld. His well illustrated article showed the new host plant as well as various larval instars, including prepupal and the emerged adult of *C. donowani.* He also included a scanned image of the prepupal "*C. donowani* larva" from Common and commented that its "black segmental bands broken by white

circular lines" did not match the image of his prepupal larva which showed "uninterrupted black bands" (see image 3). He surmised that this could possibly have been due to "variations between larvae", and concluded by suggesting that further observations of larvae of both species would be "valuable".

3. Prepupal *Cruria donawani*

Jordan and Schwencke (2005) illustrated a final instar larva and resultant adult *C. donowani* (specimen in JTM collection) and noted a new host plant for the species – Slender Grape, *Cayratia clematidea* (Vitaceae). The larva was found in open forest at Woodford, northwest of Brisbane. The larvae of this species, also having uninterrupted black bands, clearly did not match the image in Common.

In mid-February this year, whilst on a visit to Fairhill Native Botanic Gardens at Yandina, I noticed females of *C. synopla* ovipositing on Cunjevoi Lily, *Alocasia brisbanensis* (formerly *A. macrorrhizos*) (Araceae) (illustrated image 4). On close inspection, eggs, as well as all larval instars (including prepupal) were observed and photographed in situ (see image 5). The early instar larvae were found only at the very base of the leaf petiole at its attachment.

4. Cunjevoi Lily (*Alocasia brisbanensis*)

Coincidentally, some larvae of the hawk moth *Theretra tryoni* were found sheltering along the dorsal petiolar folds of the leaves, in company with later instar *C. synopla*. Several of these specimens subsequently pupated in curled dead leaves (see images 6 and 7 of both cocoons and pupa) and later emerged as adult *C. synopla.*

5. First and second instar *Cruria synopla* larvae

6. Cocoons of *Cruria synopla* in curled leaves

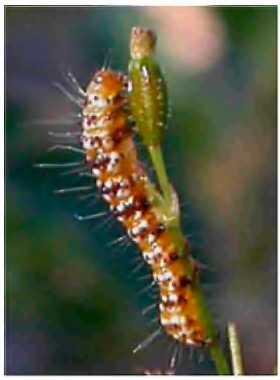
7. Pupa of *Cruria synopla*

With the exception of the first instar, larvae (see images 8 and 9) clearly show black segmental bands overlain with white, roughly circular rings, giving the appearance of rows of round black spots. Early and final instar larvae of *C. donowani* (as per Kendall, 2009) have uninterrupted black segmental bands (see images 10 and 11).

Thus, it is clear that the larval image in Common, 1990 should correctly be referred to *C. synopla* and not *C. donowani* as stated.

8. Final instar *Cruria synopla* larva

9. Prepupal *Cruria synopla* larva



10. Early instar *Cruria donawani* larva

11. Final instar *Cruria donowani* larva

Sympatry or parapatry

It is not surprising that the two species are easily confused, as their widespread eastern coastal and subcoastal occurrence is narrowly sympatric (same area). I have found both species flying together in a picnic area on the western side of Cunningham's Gap where several host plants, including Cunjevoi (*Alocasia brisbanensis*) and various native grapes (*Cissus* and *Cayratia* spp.) occur in a riverine ecotone situation. However, on repeat visits to Stony Creek picnic area, northwest of Woodford, where the same host plants occur, I have only found *C. synopla*. Also, at the base of Mt. Warning, on the edge of rainforest and with a similar host plant mix, I have found only *C. synopla,* again on repeat visits. Thus, it is likely that the record of *C. donowani* from that site (McAlpine, 1981) is erroneous and should be referred to *C. synopla.* Breeding populations of the two species may actually be parapatric (adjoining areas), with *C. donowani* preferring drier areas and *C. synopla* favouring wetter habitats. In a personal comment, Michael Braby adds "*C. synopla* is largely restricted to the moist coastal areas east of the Great Escarpment, whereas *C. donowani* is much more widespread, occurring also in the drier woodlands west of the Great Dividing Range. The two species only have a narrow zone of overlap on the coast."

Interpreting the literature

Neither McAlpine (1981) nor Cantrell (1984) illustrated their *"Cruria donowani",* but the description of *C. donowani* in the latter paper of larvae with "transverse rows of roughly circular black spots ---" agrees with the above description of *C. synopla.* Moreover, the adult description, including the "broad yellow band on the hindwing" is diagnostic of *C. synopla*!

Notwithstanding the above observations it is quite likely that both species have some host plants in common and feed opportunistically depending on availability and thus it was quite possible that the species breeding on *Alocasia* in David McAlpine's greenhouse at Willoughby in Sydney was *C. donowani*! However, Michael Braby (pers. comm.) examined all of McAlpine's Australian Museum specimens (of presumed *C. donowani*) reared on *Alocasia* and found that they were all *C. synopla*!

From my observations it appears that the *Theretra* larvae are primarily responsible for leaf-blade chewings of the *Alocasia* whereas the early instar *Cruria* larvae appear to eat the epidermis of the petiole and later instars tunnel into the developing leaf bud and the petiole itself. These observations concur with those of the above two authors.

Although Scott (1891) illustrated *C. donowani* adult and larva, as well as the host plant *Cissus antarctica,* this was published prior to Turner's description of *C. synopla* in 1903. Although I have not been able to access Scott's paper nor view his illustrations, Michael Braby (pers. comm.) has examined the original colour plate prepared by Harriet Scott and has confirmed that it is indeed *C. donowani*!

Postscript

Ted Edwards (pers. comm.) mentions a specimen of *C. synopla* in the Australian National Insect Collection said to have been reared from *Alocasia macrorrhizos* (sic) by the late V. J. Robinson – he considers this a genuine record although Common did not include it in 1990. I am pleased to have been able to confirm this as a valid historical record.

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Acknowledgements

I wish to thank Ross Kendall and Michael Braby for helpful comments and for reviewing the manuscript and Ted Edwards for his earlier comments to Ross.

Photos – Cunjevoi and all *Cruria synopla* images by John Moss – all *Cruria donawani* images by Ross Kendall

ITEMS OF INTEREST

Caper Whites - will they or won't they? – *Peter Hendry*

Just as I am starting to see a few Caper Whites (*Belenois java*) pass through my garden, Martin Bennett has started emailing me the following images. Martin is on the move doing surveys on various plant species out west. He has noticed large numbers of Caper Whites building up in various parts of the country. The question is will they or won't they put on a display equal to the last big migration in 2007 (see our newsletter issue No 47). At that time many thousands migrated through south east Queensland and were reported throughout all forms of the media.

Fig. 1

Fig. 2

Fig. 3

Fig. 1 shows eggs on *Capparis mitchellii* taken at Long Grass Nature Reserve, 30km SW of Gatton, 6-11-2010. Fig 2. shows a larva on *Apophyllum anomalum* near Chinchilla, 16-11-2010. Fig. 3 shows a row of pupa on *Capparis lasiantha* at Woleebee Creek south west of Wandoan, 22-10-2010. Note the complete defoliation, not a leaf left!

Photos Martin Bennett

****

White-banded Plane or Common Aeroplane *Phaedyma shepherdi* (Lepidoptera: Nymphalidae) - *Hilton Selvey*

The White-banded Plane is a brownish-black and white butterfly with a 55mm wingspan. It will settle on foliage with its wings outstretched basking in the sunlight. It is not a very striking butterfly, but the immature stages are well worth studying for their astonishing ability to hide on the host plant in plain view. So far the only predator that I have discovered is the larva of the Green Lacewing (*Mollada signata*).

White-banded Plane (*Phaedyma shepherdi*)

The 1.4mm eggs are laid at the tip of the leaves of its favoured host plant Koda, (*Ehretia acuminata)*. These eggs are green in colour, an exact match of the colour of the leaf. Each egg is covered in hexagonal facets with a short spine at the junctions of each facet. The egg changes to a yellow colour, as the developing larva is about to emerge. Since the leaves of the Koda hang downwards, rainwater will flow down the leaf. Inevitably a drop of water will stay at the tip of the leaf, but if an egg is present it could spend the night under water. This has not been observed to harm the egg.

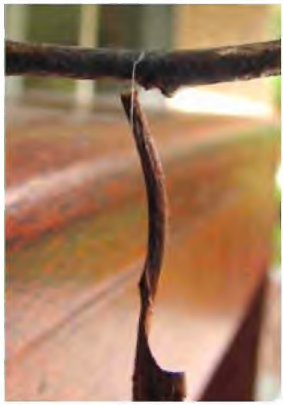
Egg on leaf tip

On hatching, the minute larvae eat their eggshells and then start on the leaves, eating the leaf away on either side of the central vein, leaving a small platform at the tip of the leaf on which the larva rests head downwards. Like the eggs, larvae can spend the night covered in water without harm. The larva cuts out small portions of leaf attaching these pieces to the central vein with silk. These pieces of leaf rapidly turn brown and flutter in the breeze. The larva is brown and is difficult to see against a background of dead leaf portions. As the larva grows, it turns black in colour developing multiple spikes resembling small dead twigs. This effect is enhanced by the remarkable flexion of the body behind the thoracic segments. Since the first two or three abdominal segments are raised the head of the larva points downwards. Large forward bending spikes grow from the dorsum of the last thoracic segment and smaller spikes from the first thoracic segment; the third and last abdominal segments resemble small dead twigs.

Small larva with dead leaves

When the larva is nearing pupation it lays down a silk sling joining a leaf stem to a branch. Once the silk is thick enough it cuts through the leaf stem, which then hangs there rapidly turning brown. The larva might do this several times before it pupates upside down alongside a dead leaf. The pupa is about 25mm in length and its shape and colour duplicate the dead leaf almost exactly. Sometimes the pupa is almost enveloped by the dead leaf.

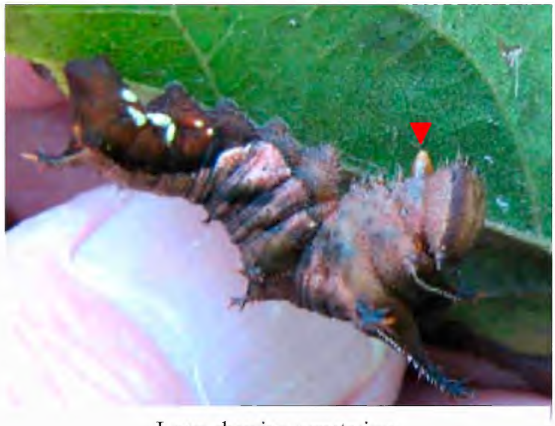
Mature larva



Silk sling

Pupa almost enveloped by dead leaves

Osmeteria are found only amongst the Papillionidae but the larva of the White-banded Plane is an exception. Club member Bob Miller first described this osmeterium in 1998 as reported by Frank Jordan in an article for the club's Newsletter No. 9, June 1998. It is just a single short projection on the ventral surface close to its mouth. This is illustrated in the picture. Like other butterfly species, the larva protrudes its osmeterium when disturbed but unlike the papilios there is no obvious offensive odour.



Larva showing osmeterium

Acknowledgement: My wife's computer skills enabled the photographs to be processed.

Photos Hilton Selvey

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A Cryptic Geometrid - *Peter Hendry* and *Murdoch De Baar*

The deceiving postures by the moth *Gonodontis orthotoma* (Lower, 1849) (subfamily Ennominae) is captured in Figs. 1 & 2. Its outline is sufficiently obscured to fool birds. Even a moth enthusiast would have trouble comparing a specimen viewed on a wall, to a pinned specimen in a geometrid museum collection.

Figs. 1 and 2 –Two views of a resting posture of a cryptic geometrid. – Photos Murdoch De Baar

We have included a museum-prepared specimen photograph Fig. 3, that is so unlike its resting pose. Curiously this interesting moth appears **not** to be illustrated in any textbooks. Fig. 4 is a colour variation showing white markings in the wings. This variation also occurs in *G. luteola* (Turner, 1904) and can be seen on the following web site: http://www.lepbarcoding.org/australia/species.php?region=1&id=70077

Fig. 3. Pinned specimens for comparison
Photo Murdoch De Baar

Fig. 4. Colour variation
Photo Peter Hendry

In Australia there are five species of *Gonodontis,* the other three being *G. fenestrata* (T.P. Lucas, 1900) *G. stramenticea* (Turner, 1947) and *G. euctista* (Turner, 1947). Along with *Probloptera embolias* (Meyrick, 1892) they are placed in the tribe, Gonodontini within the Ennominae.

We could find nothing on the biology of *G. orthotoma.* The genus is not mentioned in Common's Moths of Australia. Overseas the species *G. clelia* is reported to eat plants from several families including Myrtaceae, Oleaceae, Euphorbiaceae and has been

reared from plants in the families Sonneratiaceae, Myrsinaceae, Avicenniaceae, Sapindaceae and Euphorbiaceae. It pupates in a cocoon incorporating particles of substrate. (Holloway).

We wish to thank Ted Edwards for identifying the moth.

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http://www.mothsofborneo.com/part-11/Gonodontini/gonodontini_1_1.php
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Life history notes on the Southern Pearl-white, *Elodina angulipennis* (P.H. Lucas, 1852) Lepidoptera: Pieriidae - *Wesley Jenkinson*

This butterfly species, previously known as the Common Pearl-white is frequently encountered in Southeast Queensland, occurring south from Colosseum Creek and Bulburin State Forests (M. De Baar and D.L. Hancock 1993a; J. T. Moss *et al.* 1996) into New South Wales. It inhabits a wide range of forests, including coastal littoral rainforest, subtropical rainforest, and dry vine forest. It also penetrates inland west of the divide into drier scrub, brigalow forest and open woodland where the host plants are growing. The adults occasionally find their way into suburban gardens if the host plant *Capparis* is growing nearby. Unfortunately *Capparis* is very slow growing with most species having sharp thorns along the branches creating an unattractive market for commercial nursery suppliers. Also the leaves of the plants are often stripped by the migratory Caper White (*Belenois java*) butterfly larvae.

The adults have a 'pearly' white appearance as the name suggests. Within Southeast Queensland it could be confused with three other closely related species, the Striated Pearl-white (*Elodina parthia*) which has a 'chalky' appearance, the Narrow-winged Pearl-white (*E. padusa*) which has slightly narrower wings and the Glistening Pearl-white (*E. queenslandica*) which is almost indistinguishable. The Glistening Pearl-white is known as far south as Maryborough (K.L. Dunn; J.T Moss *et al.* 1996). These four species should not be confused with the well known Cabbage White butterfly (*Pieris rapae*), which is slightly larger, has a different flight pattern and feeds on host plants in the Brassicaceae family.

The adults have a comparatively weak flight. The males can be observed patrolling forest margins while the females frequent the same areas where the host plants are growing. The adults fly in sunny weather but flight often persists in warm cloudy

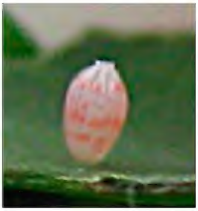
conditions. They settle on the upperside of leaves in forest understory and visit hilltops, but the males don't exhibit typical hilltopping behaviour. Both sexes are readily attracted to a wide range of small native and introduced flowers.

Within Queensland, individual specimens show slight variation in the extent of the black marking on the forewings, the shape of the forewing outer margin and the extent of the apricot colour on the forewing underside.

Wingspans for the pictured adult specimens are males 37mm and females 38mm.

Elodina angulipennis **(**Southern Pearl-white**)**
Images left to right: male, female, male underside, female underside

I observed a female ovipositing on a small tree, thought to be Scrub Caperberry (*C. arborea*), south of Beaudesert in Southeast Queensland. She settled on the upperside of a fresh shoot and laid a single egg. The wings remained closed while ovipositing. An egg was collected and raised to an adult on the small-leafed Scrambling Caper (*C. sarmentosa*) which is more commonly used as a host plant by *E. parthia*.



The eggs are barrel-shaped, approximately 0.6 mm wide x 1.0 mm high, with 13 vertical ribs and fine horizontal lines between them. The eggs are pale white when laid, later developing irregular pink markings.

Image of 4 day old egg

The larva consumed the eggshell soon after hatching. It rested along the fine stems of the host plant and fed from the edge of soft fresh leaves during the day. The final instar larva also occasionally fed during the night. It attained a length of 22mm and completed four instars, similar to *E. parthia*. R.H Fisher also described the larvae of *E. padusa* completing four instars as in Braby, 2000.

I have also located larvae during the day on the larger-leaved host plants where they were found resting openly on the upperside of leaves, along the midrib. The beautifully coloured larvae are very cryptic and difficult to locate.

1st instar larva

2nd instar larva (with discarded head capsule)

3rd instar larva

4th instar (after moulted skin)

4th instar larva

In captivity the pupa, measuring 17mm in length, was located below two leaves stitched together with silk. Typically, it was attached by the cremaster and a central girdle.

Pupa

Eggs laid on 23rd October 2008 hatched in 5 days, the larval duration being 16 days and pupal duration 7 days, with adults emerging in November, 28 days after oviposition.

Within the new boundary of the Scenic Rim Regional Shire south of Brisbane, I have records of the adults in all months of the year. The adults appear to be more numerous during spring, late summer and autumn, where they tend to disperse from their 'local' breeding areas. However these times relate to the timing of local rainfall triggering fresh growth of the host plants.

So next time you are in the garden, spend some time looking for this fine species as it may well be present!

Photos Wesley Jenkinson

Reference:

Braby, M.F., 2000. Butterflies of Australia – Their Identification, Biology and Distribution. vol 1. CSIRO Publishing.

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Observations of a beginner - *Ray Archer*

In my little butterfly house I grow some caterpillar plants for the butterflies to lay eggs on. There are lots of flowers to supply nectar for the butterflies also. Pentas is the one they seem to visit most. It's easy to grow and flowers almost all year long. I planted a tiny, delicate vine called *Passiflora aurantia*. It's a host plant (food plant) for the caterpillars of the Glasswing butterfly. Once the roots of the vine got established in the soil, the thing took off and covered about six square metres. The little tendrils clung to the shadecloth covering the east end of my butterfly house.

Glasswing female

There's a picture of the Glasswing butterfly, it's caterpillar and chrysalis on page 21 of the little book 'Create More Butterflies'. The pretty red-flowered *Passiflora aurantia* is also shown. The text says the vine is easily grown from cuttings. It's a great little book to have for south-east Queensland. It shows pictures of the caterpillars and chrysalises which some butterfly books do not. If you want a copy, it's readily available from B.O.I.C.

Next I needed some eggs or caterpillars to put on my vine. I asked some of the Butterfly Club members and Lois Hughes gave me about 100 eggs. The Glasswing butterfly deposits her eggs close together on the leaf. Lois gave me two leaves with about 50 eggs on each. Lois does the fantastic paintings for the cover of the B.O.I.C. magazine. She also sells butterfly cards and paintings.

I have ADD so I very impatiently waited a whole seven days for the eggs to hatch into tiny caterpillars. I've bought a little pocket magnifying glass that I can carry

everywhere I go, because my 62 year old eyes aren't as good as they used to be. Now I can see the incredible shapes of the tiny eggs and watch the little caterpillars chewing their way out of the eggs.

After transferring the little caterpillars onto the passion vine, they ate and ate and grew and grew and finally changed into really beautiful cream and black chrysalises. Well, I nearly ran out of patience as I waited another whole two or three weeks for the butterflies to hatch. They mated and laid eggs again. The eggs hatched and before long there were hundreds of little caterpillars, eating and growing until there were no leaves left on my vine. Only hungry caterpillars remained. They were even eating the skin of some of the passionfruit on the vine. Since I've embarked on a 'Bring Back the Butterflies' campaign, I had to figure out how to save them all. What would I do?

Larva and eggs of *Acraea andromacha* – the Glasswing butterfly

Earlier, I had received some rectangular take-away food containers from the very kind and patient President of B.O.I.C., Ross Kendall. Ross had cut holes about 75x45mm in the lids and stapled in pieces of fine fly screen mesh to cover the holes and let the air circulate.

I placed a flat piece of slightly damp paper towel in the bottom of each container to catch the manure and make them easier to clean out. From our garden I collected leaves to put in each container. I tried ordinary eating passionfruit (*Passiflora edulis*) and an exotic weed called Corky Passion Vine (*Passiflora suberosa*). I also tried leaves from a vine I bought as Sweet Lilikoi from a market. It has large fleshy leaves and a spectacular flower that is highly perfumed. The people told me it was *Passiflora elata*. I suspect it's the very nice 'sugar fruit' we bought from food markets in Papua New Guinea recently. Finally, I also tried *Passiflora maliformis* which is also called Japanese Passionfruit, Sweet Calabash or Hard Shelled Passionfruit. We introduced this one to the public about 35 years ago when we had a nursery specialising in the sale of fruit and nut trees. It gives huge crops of ping-pong ball sized fruits that have a light olive-green coloured shell. The shell is so hard

that we crack them in the vice then scoop out the very sweet flesh. It doesn't have the acid bite that some of the commercial passionfruit have.

Well, here's what happened. The Glasswing caterpillars didn't like the ordinary passionfruit leaves at all. They'd rather die than eat their 'cabbage'. They didn't eat the Sweet Lilikoi either, but were very happy with the Corky Passion Vine and the Hard Shelled Passionfruit (*P. maliformis*). I now notice that new batches of eggs have been laid on these two vines. They have hatched and the caterpillars are thriving.

Bringing Back the Butterflies is something that I'm really enjoying. They don't pee on you or poo on you or yell at you or bite you. They bring a lot of peace.

Photos Russel Denton

Ed.: Further on in this edition see the report on the launch of Ray's latest project – Butterfly Plants for Poverty.

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Gum-leaf Skeletonizer - *Uraba lugens* (Lepidoptera : Noctuidae) –

Peter Hendry

On the 23/09/2010 I received a phone call from Alex Leggett a journalist with the Gatton Star newspaper. He was doing a story on a plague of hairy caterpillars that were devouring the gum leaves of the Laidley district and wanted to know their identification. Alex had been speaking to BOIC member Ray Archer which led to me receiving his call. By the description on the phone I was only sure it was a moth and asked Alex to email me an image.

Defoliated *Eucalyptus crebra*

On receipt of his email I realized that it was not a larva I was familiar with, so the search was on. Some of the moth families that have hairy larvae include the Anthelidae, Arctidae, Lasiocampidae, Lymantriidae, Noctuidae and Nolidae. I discounted the Lymantriidae because of the arrangement of the hairs. Lymantriidae larvae are known as toothbrush caterpillars because of the rows of short bristles they

carry on there back resembling a toothbrush. My search led me to the now out of print Flying Colours by Pat and Mike Coupar, where amongst the Noctuidae I found an image resembling Alex's.

The image was of the Gum-leaf Skeletoniser, *Uraba lugens* Walker, 1863. (At the time Flying Colours was published *U. lugens* belonged to the Noctuidae subfamily Nolinae which has since been elevated to family status, Nolidae). Under the heading Foodplant it said "*Eucalyptus* spp. The caterpillars may defoliate young trees". This fitted the activities of Alex's caterpillars but I was still not sure because of a strange distinguishing feature of this moth's life cycle. The larvae of *U. lugens* retain the old head capsules each time they pass from one instar to the next. These capsules are piled one on top of the other and carried around on top of their head. This was not evident in Alex's image which, in respective, was of a youngish larva.

Uraba lugens adult

In the meantime BOIC president Ross Kendall had gone to Gatton for Ray Archer's Open Garden and was bombarded by the question, "What is that 'butterfly' eating all the gum leaves?" On his return Ross stopped to photograph and collect some specimens. As happens, these images turned up in my inbox and there they were, in amongst the long hairs, a stack of old head capsules, convincing me I had found the culprit. Ross had identified the host trees to be the Narrow-leaved Ironbarks *(Eucalyptus crebra)* and made inquiries to Ted Edwards and Murdoch De Baar. Both confirmed it was *U. lugens* with Ted adding, "They belong to the *Uraba lugens* complex as it is possible that there is a complex of species rather than one". The common name is Gum-leaf Skeletonizer. They occasionally have outbreaks in many parts of Australia, skeletonizing the leaves of eucalypts. The accumulation of cast larval head capsules is typical of them". Murdoch added "There have been previous bouts of this moth causing havoc, also *Panacela*" and attached an article from the December 10 2008 Courier Mail. The article was about millions of hairy, itchy caterpillars making life hell for the residents of Yandaran, a small town north of Bundaberg. A photo of a

Larva showing stack of head capsules

woman walking her dogs while wearing coveralls accompanied the article. Murdoch noted the moth to be a *Panacela* sp. in the Eupterotidae family. In further correspondence Ted has noted the following, "Both *Panacela* and *Uraba* can cause skin itching (urtication) when people come in contact with the larval hairs. *Uraba* is also supposed to have some stiffer setae which can sting".

Cocoon with head capsules and hairs

Apart from carrying their old head capsules around at the larval stage *Uraba lugens* also include them in their cocoons, along with their hairs. Another strange aspect of their life cycle is the fact that the average number of stages for Gum-leaf skeletonizer caterpillars is 11 though there may be up to 13. (In most moth species there are only 6 caterpillar stages) (Primary Industries and Resources South Australia PDF). Their distribution ranges from Cooktown to the Atherton Tableland, southern Queensland to Victoria, South and south West Australia and Tasmania (Common 1990).

References:
Common, I.F.B. 1990. Moths of Australia. Melbourne University Press
Pat and Mike Coupar 1992. Flying Colours. New South Wales University Press
Primary Industries and Resources South Australia PDF
http://www.pir.sa.gov.au/__data/assets/pdf_file/0019/32923/Number_16_Gum-leaf_Skeletonizer.pdf

Photos Ross Kendall

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Life history notes on the White-banded Line-blue, *Nacaduba kurava* (Moore, 1858) Lepidoptera: Lycaenidae – *Todd Burrows*

My first experience with *Nacaduba kurava* came at Tweed Heads NSW (28/1/10) when I noticed a female laying eggs on the new growth of the River Mangrove (*Aegiceras corniculatum*). She flew before I could take a photo but on closer inspection I found a small larva feeding on the upper surface of the leaf. Within a few days (31/1/10) I observed this species on South Stradbroke Island QLD. I found a male within the vicinity of Tuckeroo

Early instar larva

(*Cupaniopsis anacardiodes*) a recorded host for this species (Braby, 2005) but was unable to locate any larvae.

Nacaduba kurava male

Nacaduba kurava female egg-laying

Above - Pupa
Left - Late instar larva with attendant ants

While near the western shoreline of SSI a few weeks later on (20/2/10) during the early afternoon, I noticed a small number of females fluttering about and landing on River Mangrove. I managed to get some nice photos of a female laying eggs on leaf buds. Some time later (10/3/10) I visited the same plants to have a search for larvae and was pleased to find two of them close to maturity and being attended by large black ants (I always find this most interesting). The larvae were feeding on the new growth and the pictured individual was chewing on the stalk of a fresh leaf. I collected one of the larvae in the hope of photographing the pupa but it had a mysterious escape before it pupated. I returned again to the same mangroves (12/3/10) to try and find another larva but instead found a pupa attached to the upper surface of a mangrove leaf. I collected the pupa and a male emerged just over a week later.

Most males I have encountered have been within the vicinity of host plants and seem to have clearly defined territories. They would perch on the upper leaves of small trees within a few metres of the ground and repeatedly return to the same few leaves and sit with wings closed. Other males that came within range were chased and other butterfly species passing by also caused them to take an investigative flight.

Muttonwood (*Myrsine variabilis* formerly *Rapanea variabilis*) is another recorded host plant for *N. kurava* (Braby, 2005) and is present on SSI. On one occasion I have witnessed a female laying eggs on this species.

References:

Braby, M. (2005). *The Complete Field Guide to Butterflies of Australia* CSIRO Publishing, Victoria

Photos Todd Burrows

NEW HOST PLANT RECORD

A new host plant for the Spotted Jezebel butterfly (*Delias aganippe)*

- Ross Kendall

On October 21st 2010 while examining specimens of the Alphitonia Mistletoe (*Amyema conspicua*) parasitising Crepe Myrtle (*Lagerstroemia indica*) growing beside Moggill Road, Indooroopilly, I noticed both larvae and pupae of a *Delias* butterfly species. Closer examination convinced me that the larvae and pupae were those of *Delias aganippe*.

Prepupal larva of *Delias aganippe* on *Amyema conspicua*

Pupa of *Delias aganippe*
Photos Ross Kendall

I collected specimens and photographed them. The female adult that subsequently emerged was also photographed. *Amyema conspicua* can now be recorded as a host for the Spotted Jezebel.

Upperside Female *Delias aganippe* Underside
Photos Hong Ming Kan

SCHOOL PROJECTS

Third Time Lucky – *Dave St. Henry*

Creating butterfly gardens at schools is habit forming! Quite a while ago I started my first butterfly garden at Lakes Creek State School (reported in BOIC Newsletter No. 31 December 2003). The children were excited. We had a little community involvement, planted some host plants and saw some butterfly action, but then I was transferred to another school! And the garden went bush.

At my new school, Parkhurst, I had a similar opportunity and a nice 30 x 15m stretch of dirt outside my classroom that I laid claims on! The staff and parents were very supportive as they saw the education values in having a butterfly garden and the students couldn't believe they were allowed to dig dirt, spread mulch, run irrigation, make paths and plant plants in school time!

This was a very pretty butterfly garden as the meandering path was lined with dwarf Pentas (nectar plant) and had clumps of host plants strategically placed all the way along. It was quite successful with probably a dozen species utilizing it but was tragically destroyed as my building had to be relocated!!

So here I am again, now with a good chunk of experience and a whole set of big goals. This time, we commandeered gardens that were certain of heritage status! We removed all vegetation, put about 15m³ of enriched topsoil on the garden beds - much to the delight of the year 4/5 back yard blitz team – mulch and dripper irrigation. We sourced plants and seeds from BOIC members, Council, SGAP members, and even Bunnings! We targeted 25 common and uncommon species and set up an ecological/ environmental plan with goals and checkpoints.

The following quote is from the kids:

"Our two year 4/5 classes have decided to develop a sustainable and environmentally effective butterfly garden. We were learning about butterflies in class and realised that they are more than just beautiful creatures.

They are very important for pollination of flowers and fruit. Their sheer numbers supply a massive link in the food chain and they also are an ecological marker that helps us become aware of the influence us humans have on the environment.
With their acute sensitivity to pesticides and toxins, their presence brings a simple message: A healthy ecosystem will have a large number and wide variety of butterfly species.

Our aim is to increase the butterfly population in the Rockhampton region - this will reduce our schools ecological footprint in a small but practical way.

We have forms for data collecting so we can observe which butterflies are seen in the garden and which ones lay eggs. We are going to raise the caterpillars indoors and release the adult butterfly because this will overcome the issue of their very low life cycle rate and make a big difference to their numbers in the wild. Over a few years this data collecting should let us know if our unique initiative is working well or not.
We have another goal that will continue to spread our environmental message. We will be collecting seeds from our

host plants and giving them to the students to take home to plant out at their place so the community can have a greater amount of host plants."

So far we have host plants for about 15 species and since the start of term 4 (Oct) we have had 4 species come into the butterfly 'nursery' (Wanderer, Lesser Wanderer, Tailed Emperor and Chequered Swallowtail). (*As I am writing this the kids have found 64 Scarlet Jezebel eggs*!!) One strategy I employed this time which has had remarkable success is to print off and laminate labels of the host plants with a picture of the butterflies that it attracts. Once these were up, the whole school had an increased interest. Some resources that helped were Garry Sankowsky's 'Garden on the Wing' CD-Rom, and of course BOIC articles.

Photos Dave St. Henry

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School environmental activities – *Col Bowman*

This is an outline of the environmental program I use when visiting mainly primary schools, although I have been invited to visit some high schools, particularly environmental classes.

I use a poster with butterfly species found in the South East of Qld to identify the large, colourful and common Swallowtail varieties, which are easy to recognize and I have readily available a DVD of their lifecycle. My introduction, using large coloured photographs, explains the cycle starting with the female seeking suitable plants to lay her eggs on and then continues through hatching of eggs and the growth stages of the caterpillars to pupation.

The caterpillar pupation and metamorphosis to the butterfly are more readily understood with the DVD and the presentation is always interactive with the students asking questions - not just a recitation of facts from me.

Some schools have flower gardens with native vegetation and some have Bush Tucker gardens with suitable native species attractive to butterflies. While we will visit these gardens to look for caterpillars and butterflies, the classroom activities are more popular with busy teachers who often cannot spare much time from the curriculum.

I am starting to introduce the butterfly rearing cage (Live Learning Kit® available from www.butterflyencounters.com.au) with caterpillar food plants (potted) to add to the soft drink plastic bottle terrarium which we make from a two litre PET bottle to grow seedlings in the classroom with little maintenance, as it is a self sustaining environment for the seedlings. The top third of the bottle is cut around the circumference and removed. Then 5 cm of creek sand (this has no salt) is put into the

bottom section and filled with water to the top of the sand. Seeds are planted into seed raising mix in 2 x 100mm planter tubes which can then be pushed into the wet sand to a depth of 15mm. This supplies the moisture to germinate and grow the seedlings to a 4-leaf stage for transplanting into a bigger plant pot. When grown to a suitable size, the plants can be planted in the garden or placed in the butterfly cage as caterpillar food. The final stage for completing the terrarium is to make 4 equidistant 20mm long cuts up the side of the top piece (which had been cut off). It is then placed onto the bottom part with 2 opposite flaps (made by those cuts up the side) placed on the outside of the bottle and the other 2 flaps pushed on the inside of the bottle. The 2 halves are sealed together with heavy duty Sellotape, with the cap in place, so that the evaporation and condensation of the water in the bottle can occur with no loss of moisture.

The PET terrarium – Photo Ross Kendall

Two words of warning: don't put this terrarium in direct sunlight as the seedlings will cook; ensure no one leaves the cap off as the water will evaporate.

I have conducted this program in the Western Fraser Coast region for 3 years with varying degrees of interest (male teachers are not always keen) and commenced a similar program around Murgon and was fortunate to meet a mother at Moffatdale School who was successful with an application for funding of a butterfly garden which was officially opened on the 8th September 2010. Teachers at other schools are interested in the Live Learning Kit® as this represents a complete program which requires little input or maintenance.

LAUNCH OF BUTTERFLY PLANTS FOR POVERTY

Butterfly Plants for Poverty (BP4P) Open Day and Launch, Ray and Delphine Archer's Property – Coominya

Sunday 21st November 2010 – *Alisha Steward*

Ray and Delphine Archer are passionate about butterflies. They have also spent a great deal of their life involved in their other passion - fighting poverty. Rather than providing hand-outs to the 'poorest of the poor', Ray and Delphine have been involved in providing micro-loans for families to start their own businesses. Five

months ago, Ray thought of combining his two passions, and Butterfly Plants for Poverty (BP4P) was born.

The intention of the BP4P Open Day and Launch was to inform people about how they could personally contribute to the cause. Butterfly host plants were offered for sale, with 100% of the profits going towards fighting poverty. Throughout the day, guest speakers, including Ray and Delphine themselves, described how our contribution could benefit butterflies and people. Their son Julian did a fabulous job as MC, introducing the guests and managing the day's events.

The official launch of the project

Ray and Delphine started the day by telling us how BP4P came into fruition, sharing their experiences and visits to poverty-stricken countries. A number of guest speakers were invited to the launch - and each spoke on three separate occasions throughout the day. Ross Kendall, our president of BOIC, discussed the club's history and achievements. Ross also wore his other hat, mentioning his business of raising butterflies for sale, and providing butterflies and kits to schools. Richard Beaumont then talked about the partnership between BP4P and the Entrust Foundation. Peter Macqueen talked about creating a sustainable garden, and shared examples from his own garden. During one of the presentations, John Moss pointed out a Joseph's Coat Moth flying alongside the marquee. Some members of the audience jumped out of their seats to take a look!

Butterfly release

The highlight of the day was the official launch of BP4P. Firstly, Haydn Sargent, a long time friend of the Archer family, stepped up to say a few words. This was followed by a release of butterflies from a box, opened by a number of children. The marquee was at capacity, with children flocking to the front to take a closer look. The butterflies flew out of the marquee into the light, but most

of them stayed close for a while so that we could observe them.

After listening to the guest speakers, I checked out Ray and Delphine's newly constructed butterfly house. The door was strictly guarded, to minimise the chance of butterflies escaping, and pests and parasites entering! Then I walked up to the observation deck on the roof of the Archer's house. What a wonderful view! I finished the day with the purchase of some butterfly host plants, including a few that I had never seen available before (*Alternanthera* sp.).

View from the observation deck. The butterfly house is the large white structure.

The day was overcast, with a few light sprinkles of rain here and there, but many butterflies still managed to be on the wing. Despite the weather, over 1,000 people attended the open day! The event was very well organised, with a great selection of food on offer, and a small animal farm, butterfly crafts, and jumping castle for the kids.

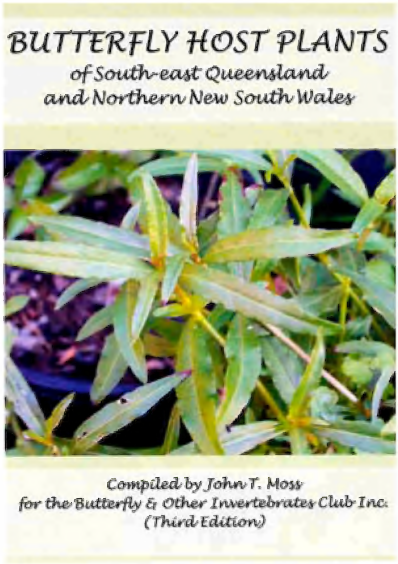
The BP4P Open Day and Launch also marked the launch of BOIC's third edition of 'Butterfly Host Plants of South-east Queensland and Northern New South Wales', compiled by John Moss. John offered autographs back at the BOIC stand! This latest host plant book has a charming glossy cover, and contains many new host plant records, including an Appendix listing names of people who contributed to the new records.

For those of you who missed the official launch – and for those of you, like me, who adore Ray and Delphine's garden and would love to visit it again – there is another opportunity to visit next year! The tentative date is Sunday 27th February 2011.

For more information about Butterfly Plants for Poverty, please refer to the website: www.butterflyplantsforpoverty.org

NEW HOST PLANT BOOK

"Butterfly Host Plants of South-east Queensland and Northern New South Wales" – *Ross Kendall*


BUTTERFLY HOST PLANTS
of South-east Queensland
and Northern New South Wales
Compiled by John T. Moss
for the Butterfly & Other Invertebrates Club Inc.
(Third Edition)

The third edition of the Club's butterfly host plant book has grown into an 80-page volume. The book has a new format and John Moss has rewritten the preface and introduction, added a further 50 plants to the plant lists and introduced a new section on new host plant records. There are 130 new records, which acknowledge the observations of 31 people. Almost 500 host plants are listed, as are the 202 species of butterflies and 10 species of moths that utilise these plants.

The book is now bound with an illustrated cover and represents excellent value at a member price of $10.00.

YOU ASKED

What beetle is this? - *Richard Zietek*
(Question and photos by Hong Ming Kan)

Lyraphora obliquata

The beetle is *Lyraphora obliquata*.

The full details are –
Family: Scarabaeidae
Sub Family: Cetoniinae
Genus: *Lyraphora*
Species: *obliquata*

The Cetonids are a group of beetles called "Flower Chafers" due to their diurnal habit of feeding on flowers of trees, particularly Eucalypts. They are important pollinators of the native plants they frequent. Its larvae have been found in hollows of *Callitris* species e.g. Bribie Pine.

Lyraphora obliquata is not as common as the attractive Fiddler Beetle *Eupoecila australasiae.*

Fiddler Beetle (*Eupoecila australasiae*)

References:
Honan, Patrick 2008. Beetles & Bugs – A Wild Australia Guide. Steve Parrish Publishing, Brisbane.
Hangay, George and Zborowski, Paul 2010. A Guide to Beetles of Australia. CSIRO Publishing, Melbourne.

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I was up at Springbrook in the rainforests today (18.11.2010) sharing the wet cool weather with leeches by the hundreds, and this wonderful large green cicada.
The cicada was very common at very high altitude, right up at the top of Repeater Station Rd which I think is about 1 000 metres elevation, near the Antarctic Beech forest. I found 3 newly emerged ones on a shrub totally unconcerned with my camera only 15 cm from them. The cases were on tree trunks everywhere there. The cicadas themselves were about 7 cm long.
I'd be interested in what it actually is if that's possible. ***Glenn Leiper***

Photos Glenn Leiper

Glenn, your excellent photo is of a Green Grocer. There are several colour forms with the green form being the most common. Yellow [Yellow Monday] is the next commonest form with other variations including dark tan [Chocolate Soldier] and blue [Blue Moon] a photo of which appeared on the cover of Australian Geographic some years ago. Emergences occur every 6 to 7 years and they are found in the coastal regions from southern Queensland to eastern South Australia. Their call is a very loud high pitched one and I can recall having to leave a patch of rainforest on Mount Tamborine where I was trying to do some birdwatching - no bird could make itself heard over the constant noise. ***Rob MacSloy***

BUTTERFLY AND OTHER INVERTEBRATES CLUB PROGRAMME

Guided Tour - Fox Gully Bushcare Restoration

What: Fox Gully – www.foxgully.wordpress.com is a 2 ha restoration site on the southern slope of Mt Gravatt. The site includes one of the most viable potential wildlife corridors linking the Reserve with Mimosa Creek. Michael Fox, President of Mt Gravatt Environment Group, will provide a guided tour of the site, explaining restoration outcomes such as return of Imperial Hairstreak butterflies and engagement of neighbours and corporates in restoring the future by bringing birds and butterflies back to our suburbs.

When: 8am Saturday 5th February 2011

Where: Directions provided on RSVP

Bring: Water, hat, sunscreen and sturdy shoes: site is quite steep in parts. Morning tea will be provided.

RSVP: Sue Jones, 07 3349 9443, rhysandsusan@optusnet.com.au

Ed. - For catering purposes, could you please let Sue know a week in advance as to how many people they might expect?

Planning and Management Meeting

What: Our planning meetings are informative and interesting. As well as planning our activities we share lots of information. All members are welcome as this activity is also a general meeting of members.

When: **Saturday 19th February, 2011** from **1.30 pm**

Where: Rob MacSloy's home, Alexandra Hills (phone Rob for directions)

RSVP: Rob on 07 3824 4348 or Daphne on 07 3396 6334

Disclaimer

The magazine seeks to be as scientifically accurate as possible but the views, opinions and observations expressed are those of the authors. The magazine is a platform for people, both amateur and professional, to express their views and observations about invertebrates. These are not necessarily those of the BOIC. The manuscripts are submitted for comment to entomologists or people working in the area of the topic being discussed. If inaccuracies have inadvertently occurred and are brought to our attention we will seek to correct them in future editions. The Editor reserves the right to refuse to print any matter which is unsuitable, inappropriate or objectionable and to make nomenclature changes as appropriate.

Acknowledgments

Producing this magazine is done with the efforts of:

- Those members who have sent in letters and articles
- Lois Hughes who provides the cover painting
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- John Moss, Michael Braby, Murdoch De Baar and Ted Edwards for scientific referencing and proof reading of various articles in this issue of the magazine
- Printing of this publication is proudly supported by Brisbane City Council

We would like to thank all these people for their contribution.

Dedicated to a better Brisbane

Are You a Member

Please check your mailing label for the date your membership is due for renewal. If your membership is due, please renew as soon as possible. **Membership fees are $25.00 for individuals, schools and organizations**. If you wish to pay electronically, the following information will assist you: BSB: **484-799**, Account No: **001227191**, Account name: **BOIC**, Bank: **Suncorp**, Reference: your membership number and surname e.g. **234 Roberts.**

Butterfly and Other Invertebrates Club Inc.
PO Box 2113
RUNCORN Q. 4113

Next event – Guided Tour - Fox Gully Bushcare Restoration – 5th February, 2011 – see programme for details